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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/791,274	03/03/2004	Ryoji Ninomiya	008312-0308597	8948
909 7590 07/11/2008 PILLSBURY WINTHROP SHAW PITTMAN, LLP P.O. BOX 10500 MCLEAN, VA 22102				
EXAMINER				
WALKER, KEITH D				
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

**Application No.**

10/791,274

**Applicant(s)**

NINOMIYA ET AL.

**Examiner**

KEITH WALKER

**Art Unit**

1795

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 03 April 2008.  
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 4-19 and 21-33 is/are pending in the application.  
4a) Of the above claim(s) 4-17 and 25-33 is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 18, 19 and 21-24 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☒ Information Disclosure Statement(s) (PTO/S508)  
Paper No(s)/Mail Date 5/5/08  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_  
5) ☐ Notice of Informal Patent Application  
6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Response to Amendment***

Claims 4-19 & 21-33 are pending in the application and claims 4-17 & 25-33 are withdrawn from consideration. Claims 18, 19 & 21-24 are pending examination.

### ***Claims Interpretation***

Regarding limitations drawn to the functions that each element of the apparatus performs, an apparatus is considered patentable when it is structurally different not functionally different over the prior art. Examples of such functional language include, "stores information indicating a result sensed by the sensing unit" and "and "displays information to prompt an installation of the tank or information that the tank is not installed..." (Claim 18). While features of an apparatus may be recited either structurally or functionally, claims directed to an apparatus must be distinguished from the prior art in terms of structure rather than function. An apparatus claim covers what a device is, not what a device does. A claim containing a "recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus" if the prior art apparatus teaches all the structural limitations of the claim (MPEP 2114). The claimed functional recitations will be given proper due considerations.

### ***Information Disclosure Statement***

The information disclosure statement filed on 5/5/08 has been placed in the application file and the information referred to therein has been considered as to the

merits. It is noted that the Japanese Office Action and only the Abstracts of the two Japanese references were provided in English for consideration.

### ***Specification***

The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: The instant specification has no recitation of an informing unit. Only original claims 8 and 13 mention an informing unit in the instant specification.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

1. Claims 18, 19 & 21-24 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Regarding claim 18, the new limitation "an informing unit configured to inform the body of the updating of the information stored in the first storage unit" is not supported by the instant specification. The only mention of an informing unit is in original claim 8, "an informing unit configured to inform the sensing unit of the storage of the status information, when the status information has been stored in the storage portion" and claim 13, "an informing unit

configured to inform the control unit of the storage of the abnormal-status information". Neither of these original claims support the new limitation presented and therefore the new limitation is rejected as new matter.

Claims depending from claims rejected under 35 USC 112, first paragraph are also rejected for the same.

2. Claims 18, 19 & 21-24 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Regarding claim 18, the new limitation, "a controller which includes a second storage unit and directly reads, when the body is informed of the updating of the information stored in the first storage unit, the information indicating the remaining amount of fuel sensed by the sensing unit from the first storage unit and the information indicating whether the tank is installed in the installation portion sensed by the sensing unit and stores the read information in the second storage unit". This function is not fully supported by the original specification.

Claims depending from claims rejected under 35 USC 112, first paragraph are also rejected for the same.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 18, 19 & 21-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 6,057,051 (Uchida).

Uchida describes a personal computer, which has a body having a display unit and a controller. A detachable fuel cell unit powers the computer and comprises a fuel cell, a fuel tank, a sensor for detecting the amount of fuel remaining and a control unit with a first storage unit (Fig. 1; 3:1-40, 7:39-54). The sensor detects the amount of fuel remaining and then the amount of operation time remaining is computed. The calculated remaining operating time information is sent to the electronic apparatus through a connection terminal so the electronic apparatus' equipment can display the information (Figs. 1 & 5; 7:39-54). The method disclosed for computing the amount of remaining operating time uses mathematical computations. The information gathered and the computations made inherently require storing information from the sensors (7:43-46). The status of low fuel on the display unit would prompt one to replace the fuel in order to keep the apparatus working. A replaceable fuel tank supplies the fuel cell with the appropriate fuel (Figs. 2 & 3; 7:33-37). If no fuel tank is present then the

sensor shows a low fuel status on the display, indicating a bad connection or no connection of the fuel tank to the apparatus. The electronic apparatus' equipment, like the personal computer exemplified, inherently has a second storage unit, such as memory and a processing unit (CPU), to operate the functions of the computer and fuel cell system, which include requesting the amount of fuel remaining, operating times and operating conditions from the fuel cell unit (7:39-60). For instance, a graphics card will have memory for processing the information that will be displayed on the monitor.

Concerning claim 24, the limitations are seen as a process of operating and while the limitations have been considered, they are not given patentable weight. The process of operating the apparatus does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations.

Uchida is silent to sensing whether or not a tank is installed.

As discussed above, Uchida teaches a sensor for detecting the amount of fuel remaining. If no fuel tank is present, then the pressure sensor would indicate a 'tank pressure' of zero. This information presented to the user would prompt the user to replace or place a full fuel tank into the fuel chamber. It would be obvious to one skilled in the art to use a proximity sensor to indicate to the user that the low fuel pressure was due to a lack of fuel tank and not just to a fuel tank running low on fuel.

Therefore it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to modify the fuel cell system of Uchida with a fuel tank proximity sensor to indicate to the user that a fuel tank is needed and that the low pressure is due to a lack of a fuel tank.

Uchida is silent to an informing unit configured to inform the body of when information is updated.

When a system is periodically updating system information, it is obvious to acknowledge to other components when the update occurs so the most recent information is used in any computations like running time or error detecting. If old data is used or if it is unknown when the data was last updated, calculations based on such data will be incorrect giving false running conditions. Therefore it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to modify the system of Uchida with an informing unit so the body knows when the most recent information is stored in the storage unit.

2. Claims 18, 19 & 21-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 6,057,051 (Uchida) in view of US Publication 2004/0023087 (Redmond).

The teachings of Uchida as discussed above are incorporated herein.

Uchida is silent to using a sensor to determine if a fuel tank is present.

Redmond teaches a fuel cell system with replaceable fuel tanks (Abstract, [0003]). The tanks are placed into an accepting slot with a sensor that determines if a hydrogen tank is installed ([0215]). If a fuel tank is present the user interface displays information concerning the installed fuel tank ([0216, 0217]).

Therefore it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to modify the fuel cell system of Uchida with the fuel tank sensor of Redmond so the system and the user can determine if a tank is installed.

3. Claims 18, 19 & 21-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 6,057,051 (Uchida) in view of US Publication 2004/0022168 (Faris).

The teachings of Uchida as discussed above are incorporated herein.

Uchida is silent to using a sensor to determine if a fuel tank is present.

Faris teaches a fuel cell system using a fuel cassette as the fuel tank (Abstract). The fuel cell system includes a cassette proximity sensor to detect when a fuel cassette is inserted into a receiving mechanism (Fig. 1; [0091]). The sensor allows the system to automatically initiate the cassette loading processing once a cassette has been detected.

Therefore it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to modify the fuel cell system of Uchida with the proximity sensor of Faris in order to allow automation to the fuel tank loading process. Since Uchida teaches displaying information concerning the status of the fuel tank, it would be obvious to one skilled in the art to also display the status of the fuel tank as detected by the proximity sensor, in order to present all available information to the user.

***Response to Arguments***

Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection as required by the amendments.

***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **KEITH WALKER** whose telephone number is (571)272-3458. The examiner can normally be reached on Mon. - Fri. 8am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

K. Walker

/PATRICK RYAN/  
Supervisory Patent Examiner, Art Unit 1795